

PATENT CLAIMS

1. Switching converter, in which a said input voltage (U_E) can be switched by
5 means of at least one said controlled switch (S) to at least one said primary
winding (W_p) of a said transformer (UET), with a said control circuit (AST) for
controlling the switch, to which a said regulating signal (S_R) in the sense of the
regulation of at least the said output voltage is sent, wherein the power supply
of the said control circuit (AST) takes place via the forward voltage of a said
10 auxiliary winding (W_1) of the said transformer, a said rectifier (D2), a said
capacitor (C) and a said series regulator (LAE), on the one hand, and, on the
other hand, starting from the said input voltage (U_E), via a current path (R_s)
and a said storage capacitor (C_s),

15 **characterized in that**

the off-state voltage of a said auxiliary winding (W_1 ; W_2), which is rectified by
means of a said rectifier (D4) is additionally sent to the said control circuit
(AST) for power supply, wherein the said rectified off-state voltage is used to
20 supply the said control circuit during the operation as long as it has a sufficient
voltage level.

2. Switching converter in accordance with claim 1, **characterized in that** another
said auxiliary winding (W_2) of the said transformer (UET) is provided to
25 generate the off-state voltage, the said off-state voltage being used via a said
rectifier (D4) directly to supply the said control circuit (AST).

3. Switching converter in accordance with claim 1, **characterized in that** the
said forward voltage as well as the said off-state voltage are taken from a said
30 common auxiliary winding (W_1), wherein said uncoupling/rectifier diodes (D2;

D2') rectify the said forward voltage and lead to the said series regulator (LAE), and said additional uncoupling/rectifier diodes (D4; D4') rectify the said off-state voltage and lead to the said supply voltage terminal of the said control circuit (AST).

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4. Switching converter in accordance with one of the claims 1 through 3, **characterized in that** the output of the said series regulator (LAE) is connected with the said storage capacitor (Cs) via a said uncoupling diode (D3).